VX3X Cradle Reference Guide

IMPORTANT NOTICE.

LXE's VX3X is obsolete. This electronic guide has been made available as a courtesy to our customers. Contact your LXE representative for replacement and assistance.

E-EQ-VX3XDKRG-C-ARC

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Lithium Battery Safety Statement

Caution: Lithium battery inside. Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by battery manufacturer. (US)

Attention: Contient une pile de lithium. Risque d'explosion dans le cas où la pile ne serait pas correctement remplacée. Remplacer uniquement avec une pile semblable ou equivalente au type de pile recommandé par le fabricant. (FR)

Forsigtig: Indeholder lithiumbattterier. Risiko for eksplosion, hvis batteriet udskiftes forkert. Må kun udskiftes med samme eller tilsvarende type, som anbefalet af fabikanten. (DK)

Varoitus: Tämä tuote käyttää laservaloa. Skannerissa on jokin seuraavista tarroista. Lue Huomio-kohta. (FI)

Vorsicht: Enthält Lithium-Batterie. Bei unsachgemäßem Ersatz besteht Explosionsgefahr. Nur durch gleichen oder vom Hersteller empfohlenen Typ ersetzen. (DE)

Attenzione: Batteria al litio. Pericolo di esplosione qualora la batteria venga sostituita in maniera scorretta. Sostituire solo con lo stesso tipo o equivalente consigliato per il fabbricante. (IT)

Atenção: Contém pilha de lítio. Há perigo de explosão no caso de uma substituição incorreta. Substitua somente pelo mesmo tipo, ou equivalente, recomendado pelo fabricante.

(PT) Varning: Innehåller litiumbatteri. Fara för explosion om batteriet är felaktigt placerat eller av fel typ. Använd endast samma eller motsvarande typ batterier rekommenderade av tillverkaren. (SE)

Advarsel: Innmontert Lithium batteri. Eksplosjonsfare ved feil montering av batteri. Benytt kun batteri anbefalt av produsent. (NO)

Cuidado: Pila de litio adentro. Peligro de explosión si la pila se reemplaza incorrectamente. Reemplace solamente con el mismo tipo o equivalente recomendado por el fabricante. (ES)

Oppassen: Bevat Lithium-batterij. Incorrrecte plaatsing van batterij kan leiden tot explosiegevaar. Alleen vervangen door hetzelfde of door fabrikant aanbevolen gelijkwaardig type. (NL)

Προσοχή: Υπάρχει μπαταρία από λίθιο εσωτερικά. Υπάρχει κίνδυνος έκρηξης εάν η μπαταρία αντικατασταθεί με λανθασμένο τρόπο. Αντικαταστήστε μόνο με τον ίδιο ή ισοδύναμο τύπο που συνιστάται από τον κατασκευαστή. (GR)	**주의:** 리튬 배터리 내부. 배터리가 잘못 설치되었을 경우 폭발의 위험이 있습니다. 동일한 배터리, 또는 배터리 제조업체가 권장하는 배터리로 교체하십시오. (KR)
注意: リチウム電池が入っています。間違った種類の電池を使用すると、破裂する恐れがあります。同じ電池、または電池製造元が推奨する同等の電池を使用してください。 (JP)	**小心:** 内装锂电池。如电池更换不当，则有发生爆炸的危险。只能用电池制造商推荐的相同或同等电池进行更换。 (CN)
Dikkat: İçinde lityum bataryası bulunur. Bataryanın yanlış değiştirilmesi patlama tehlikesi yaratır. Aynısıyla veya üreticinin önerdiği eşdeğer tiple değiştirin. (TR)	

Legend: Danish – DK; English – US; Finnish – FI; French- - FR; German – DE; Greek – GR; Italian – IT; Norwegian – NO; Portuguese – PT; Spanish – ES; Swedish – SE; Turkish – TR.

Vehicle Power Supply Connection Safety Statement

Vehicle Power Supply Connection: If the supply connection is made directly to the battery, a two A slow-blow fuse should be installed in the positive lead within 5 inches (12.7 cm.) of the battery positive (+) terminal. (US)

Raccordement de l'alimentation du véhicule Si l'alimentation est raccordée directement à la batterie, un fusible à action retardée de 2 A doit être installé sur le câble positif à moins de 12,7 cm de la borne positive (+) de la batterie. (FR)

EL forsyning af køretøjet. Er forsyningsforbindelsen direkte tilknyttet til batteriet og og tilsluttet til den positive part indenfor 12,7 cm (+ delen). vil der være en langsom tændelse af 2 ampere. (DK)

Kytkentä ajoneuvon virtalähteeseen Jos virtaa otetaan suoraan akusta, 2 ampeerin hidas sulake on asennettava positiiviseen johtoon enintään 12 cm:n etäisyydelle akun positiivisesta (+) navasta. (FI)

Anschluss an Fahrzeugbatterie Bei direktem Anschluss an die Fahrzeugbatterie sollte eine träge 2 A-Sicherung in die positive Leitung zwischengeschaltet werden, und zwar nicht weiter als ca. 13 cm von der positiven (+) Batterieklemme entfernt. (DE)

Σύνδεση Τροφοδοτικού Ισχύος Οχήματος Αν η σύνδεση του τροφοδοτικού γίνει κατευθείαν στη μπαταρία, μια ασφάλεια βραδείας τήξης των 2 A θα πρέπει να τοποθετηθεί στο θετικό καλώδιο εντός 5 ιντσών (12,7 εκ.) του θετικού (+) ακροδέκτη της μπαταρίας. (GR)

Collegamento dell'alimentazione del veicolo Se il collegamento dell'alimentazione viene stabilito direttamente con la batteria, è necessario installare un fusibile ad azione lenta da 2 A nel conduttore positivo a meno di 5 in. (12,7 cm) dal terminale positivo (+) della batteria. (IT)

Tilkople strømforsyningen til kjøretøyet Hvis strømforsyningen koples direkte til batteriet, skal det installeres en 2 A treg sikring i den positive ledningen innen 12,7 cm fra plusspolen (+) på batteriet. (NO)

Ligação do fornecimento de corrente do veículo Se a ligação de fornecimento de corrente for ligada directamente à bateria, deve instalar-se um fusível de 2 A no terminal positivo, a 12,7 cm. do terminal positivo (+) da bateria. (PT)

Conexión de suministro eléctrico para el vehículo Si el suministro eléctrico se proporciona directamente a la batería, se debe instalar un fusible de retardo de 2 A en el conductor positivo, como máximo a 12,7 cm (5 pulgadas) del terminal positivo (+). (ES)

Fordonets strömförsörjningskoppling Om strömkopplingen görs direkt till batteriet, måste en 2 A-säkring installeras i den positivt laddade ledningen inom 12.7 cm från batteriets pluspol (+). (SE)

Taşıt Güç Kaynağı Bağlantısı Kaynak bağlantısı doğrudan aküye yapılırsa, pozitif bağlantı kablosu üzerinde akünün pozitif (+) kutbuna 12.7 cm mesafede 2 A'lık yavaş atan bir sigorta monte edilmelidir. (TR)

Legend: Danish – DK; English – US; Finnish – FI; French- - FR; German – DE; Greek – GR; Italian – IT; Norwegian – NO; Portuguese – PT; Spanish – ES; Swedish – SE; Turkish – TR.

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Powered Vehicle Mounting

Overview

Vehicle mounted brackets are specifically designed for vehicle mount applications. The vehicle mounted assembly restrains the VX3X and isolates it from shock and vibration.

Overhead, dash and roof support pillar mounting is via a RAM Mount accessory which includes all the hardware and squeeze plates required for vehicle mounting.

In most cases, disconnect any power and peripheral cables from the VX3X before it is secured in the vehicle mounted assembly.

Never put the VX3X into the vehicle mounted assembly until the assembly is securely fastened to the vehicle.

The VX3X must have a main battery installed when it is docked in a vehicle mounted cradle.

Quick Start - Powered Vehicle Mounted Assembly

The powered vehicle mounted assembly should be secured to an area in the vehicle where it:

- Does not obstruct the driver's vision or safe vehicle operation .
- Will be protected from rain or inclement weather.
- Will be protected from extremely high concentrations of dust or wind-blown debris.
- Can be easily accessed by a user seated in the driver's seat while the vehicle is not in operation.

Briefly ....

1. Attach the vehicle mounting assembly to the vehicle.
2. Attach the cradle assembly to the vehicle mounting assembly.
3. Secure the VX3X in the mounted vehicle cradle.
4. Adjust the VX3X to the best viewing angle.
5. If so equipped, connect antenna or optional remote mount antenna cable.
6. Connect peripheral cables.
7. Secure the DC/DC or 12 VDC power connector from the vehicle mounted power supply to the Power port.
8. Secure all cables in strain relief cable clamps.

The VX3X in the powered vehicle mounted assembly is ready for use.

Installation

Refer to the **VX3X Reference Guide** when connecting Input/Output devices to the VX3X endcap after the VX3X is mounted to a vehicle.

Caution: 	This device is intended to transmit RF energy. For protection against RF exposure to humans and in accordance with FCC rules and Industry Canada rules, this transmitter should be installed such that a minimum separation distance of at least 20 cm (7.8 in.) is maintained between the antenna and the general population. This device is not to be co-located with other transmitters.

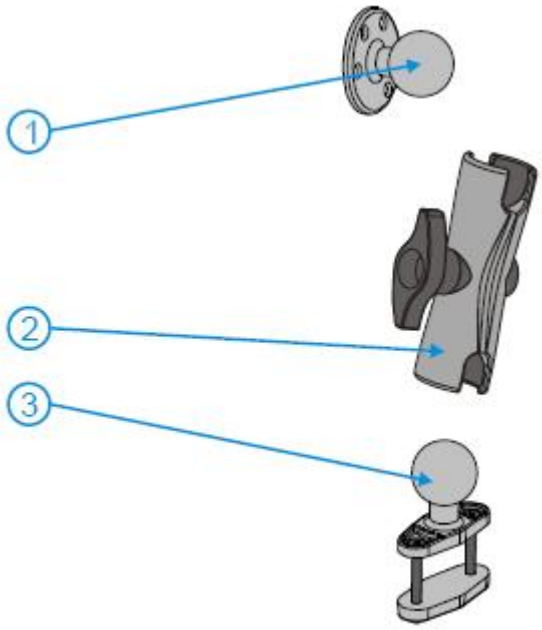
The VX3X is designed to use a RAM mount system.

Before installation begins, verify you have the applicable vehicle mounting bracket assembly components necessary, as shown in the following figures.

Components

RAM Mounting Assembly Components

The RAM mounting assembly consists of the following parts:



1. VX3X RAM ball (included with VX3X)
2. RAM arm, size C
3. RAM clamp mount includes:
    - Upper Clamp Piece with Ball
    - Lower Clamp Piece
    - Bolts (2 each)
    - Nylon locking nuts (2 each)
4. Hardware (not shown):
    - Lock Nuts, 10-32 (3 each)
    - RAM wrench

Procedure

Equipment Needed: Phillips No. 1 screwdriver and a Torque wrench capable of measuring to 50 inch pounds (5.64±.56 N/m).

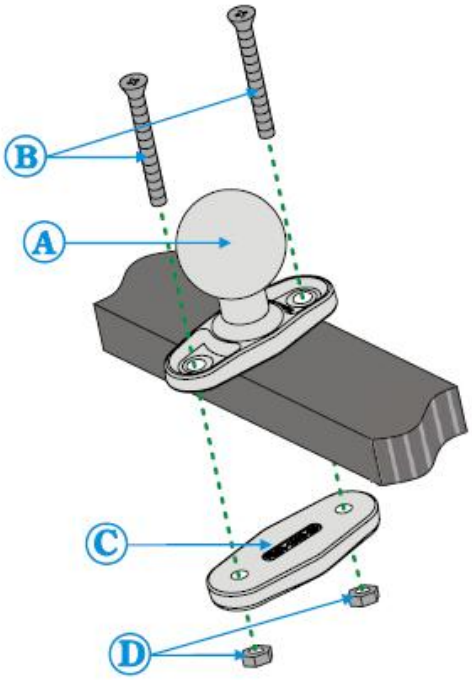
Note: Torquing tool is not supplied by LXE. Tools needed to attach the RAM Clamp Mount to the vehicle are not supplied by LXE.

Torque Measurement

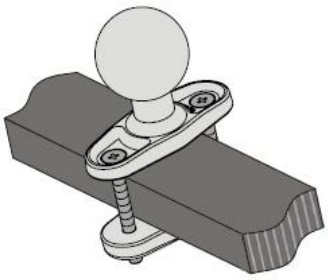
You will need a torquing tool capable of torquing to 20 inch pounds (1.10 N/m). Torque all screws and bolts according to the following table:

For these nuts…	Torque to
10-32 lock nuts	17 - 20 in/lb (0-95 - 1.10 N/m)

Step 1 – Mount Vehicle RAM Clamp Mount



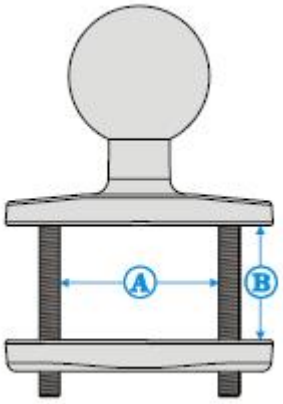
Components



Assembled

1.	Determine the position for mounting the RAM clamp mount. The clamp mount can be used on a beam (such as on a fork lift truck) up to 2.5" (63.5 mm) wide and approximately 2" (50.8 mm) thick. The clamp may be attached to a thicker beam by substituting longer bolts (not included). Be sure to position the RAM clamp mount to allow access to the switches and ports on the VX3X.
2.	Position the upper clamp piece with ball (A) on the beam. Place the bolts (B) through the holes in the upper clamp piece.
3.	Position the lower clamp piece (C) below the beam. Align the bolts with the holes in the lower clamp piece.
4.	Place the nylon locking nuts (D) on the bolts and tighten the bolts.

Mounting Dimensions (Not to Scale)



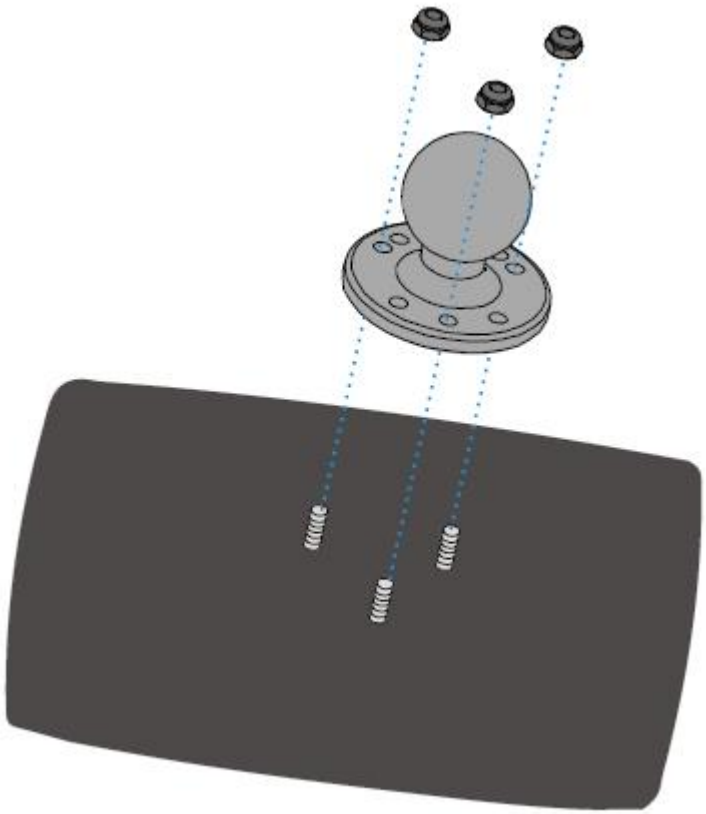
A 2.56” (65.02 mm)

1.84” (46.74 mm)

B Varies depending on bolt length

Step 2 – Attach RAM Mount Ball to the VX3X

1. Turn the VX3X off before attaching the RAM mount ball.
2. Place the VX3X face down on a stable surface.
3. Position the RAM ball bracket on the rear of the VX3X, aligning the studs on the back of the VX3X with the holes on the RAM ball mount bracket.
   Attach with three 10-32 lock nuts.

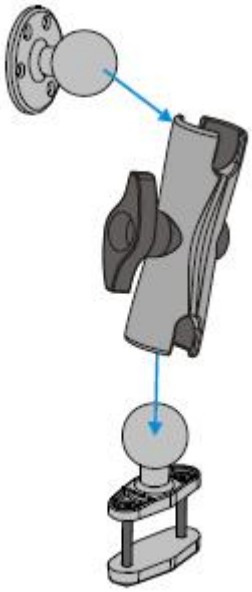


Step 3 – Attach VX3X Assembly to RAM Mount

Slip the RAM arm over the ball on the vehicle RAM clamp mount.

Insert the ball of the RAM mount bracket into the RAM arm.

Adjust the VX3X to the desired position and tighten the knob on the RAM arm using the supplied RAM wrench.

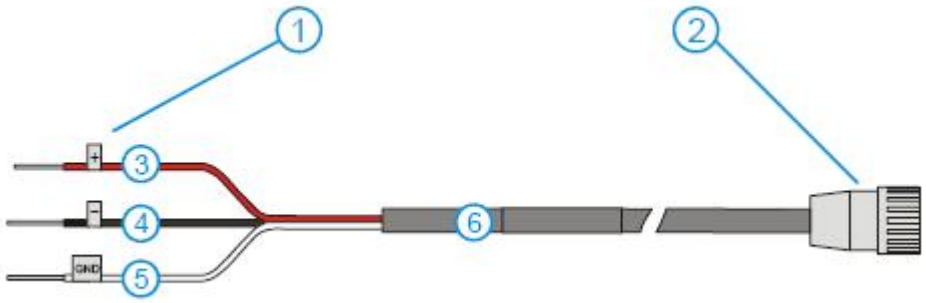


Complete the RAM Assembly

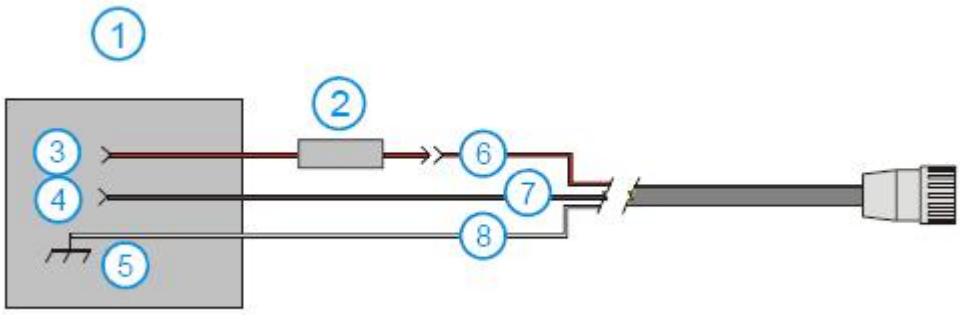
Completed Assembly

Vehicle 12-80VDC Power Connection

Caution: ⚠	For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. This fused circuit requires a two Amp maximum time delay (slow blow) high interrupting rating fuse. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery positive (+) terminal. Note: For North America, a UL Listed fuse is to be used.
Caution: ⚠	For installation by trained service personnel only.
Warning: ⚠	Risk of ignition or explosion. Explosive gas mixture may be vented from battery. Work only in well ventilated area. Avoid creating arcs and sparks at battery terminals.



1. To Vehicle Battery
2. To VX3X
3. Red (DC+)
4. Black (DC-)
5. White (GND)
6. 12 – 80 VDC



1. Vehicle Electrical System
2. 2 Amp Slow Blow Fuse
3. DC +
4. DC -
5. Vehicle Chassis
6. Red
7. Black
8. White

Note: Correct electrical polarity is required for safe and proper installation. See the following figure titled "Vehicle Connection Wiring Color Codes" for additional wire color-coding specifics.

How To: Connect Vehicle 12-80 VDC Connection

1. The VX3X must be turned off and the power cable must be UNPLUGGED from the VX3X.
2. While observing the fuse requirements specified above, connect the power cable as close as possible to the actual battery terminals of the vehicle. When available, always connect to unswitched terminals in vehicle fuse panel, after providing proper fusing.

   ATTENTION:For uninterrupted power, electrical supply connections should not be made at any point after the ignition switch of the vehicle.
3. Route the power cable the shortest way possible. The cable is rated for a maximum temperature of 75°C (167°F). When routing this cable it should be protected from physical damage and from surfaces that might exceed this temperature.

   Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate.

   Note: If the vehicle is equipped with a panel containing Silicon Controller Rectifiers (SCR's), avoid routing the power cable in close proximity to these devices.

   Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
   Use proper electrical and mechanical fastening means for terminating the cable. Properly sized "crimp" type electrical terminals are an accepted method of termination. Please select electrical connectors sized for use with 22AWG ($1mm^2$) conductors.

   Wiring color codes for LXE supplied DC input power cabling:

Vehicle Supply	**Wire Color**
+12 - 80VDC (DC +)	Red
Return (DC -)	Black
Vehicle Chassis (GND)	White

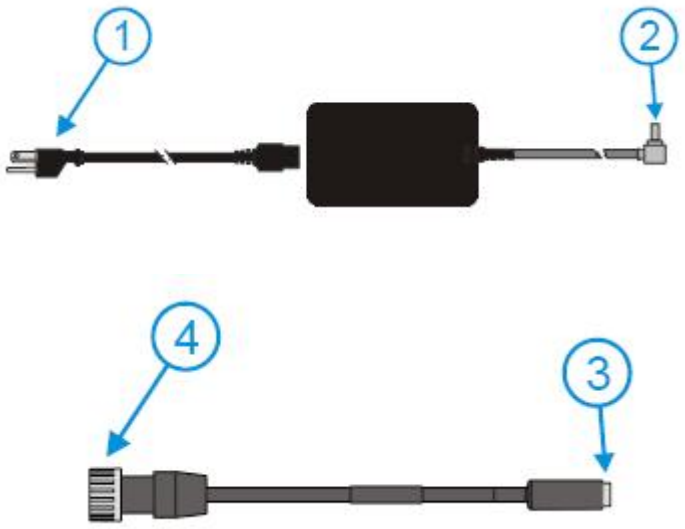
4. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.
5. Connect the power cable to the VX3X.

External Power Supply, Optional

Note: The LXE-approved AC Power Supply and Adapter Cable are only intended for use in a 25ºC (77ºF) maximum ambient temperature environment.

In North America, this unit is intended for use with a UL Listed ITE power supply with output rated 12 – 80 VDC, minimum 15W. Outside North America, this unit is intended for use with an IEC certified ITE power supply with output rated 12 – 80 VDC, minimum 15W.

The external power supply may be connected to either a 120V, 60Hz supply or, outside North America, to a 230V, 50Hz supply, using the appropriate detachable cordset. In all cases, connect to a properly grounded source of supply provided with maximum 15 Amp overcurrent protection (10 Amp for 230V circuits).



1. AC Input Cable (US only)
2. DC Output Cable
3. To DC Output Cable (see above)
4. To VX3X

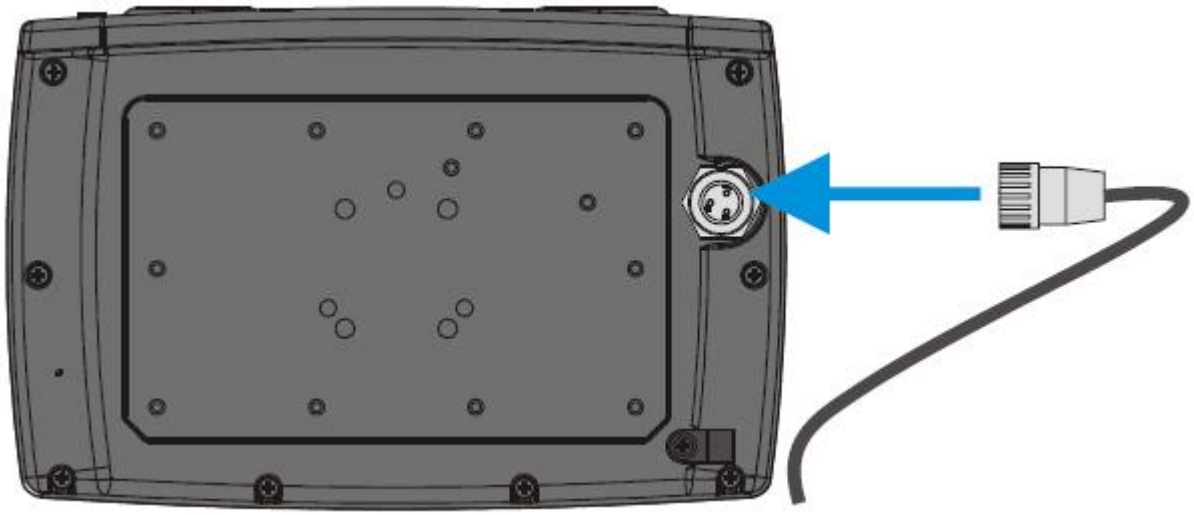
How To: Connect External Power Supply

1. Connect the detachable cordset provided by LXE (US only, all others must provide their own cable) to the external power supply (IEC 320 connector).
2. Plug cordset into appropriate, grounded, electrical supply receptacle (AC mains).
3. Connect the DC Output Cable end to the corresponding connector on the Adapter Cable.
4. Connect the watertight connector end of the Adapter Cable to the VX3X Power Connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
5. Press the Power button on the front of the VX3X.

Note: The power button is located above the ESC key on the keypad. After power is connected, the Power button must be pressed to turn the VX3X on.

Connect Power Cable

1. Connect the power cable to vehicle power (See Vehicle 12-80VDC Power Connection.)
2. The plug and receptacle are keyed and care must be used when connecting the cables. Tighten the nut of the plug clockwise until tight.
3. Secure the cable with a strain relief cable clamp.



Press the Power button on the front of the VX3X.

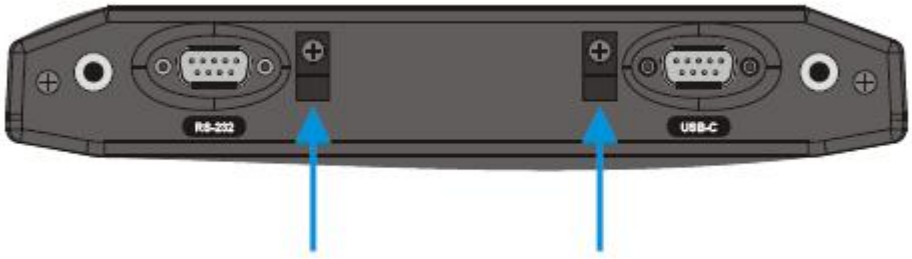
Note: The power button is located above the ESC key on the keypad. After power is connected, the Power button must be pressed to turn the VX3X on.

Strain Relief Cable Clamps

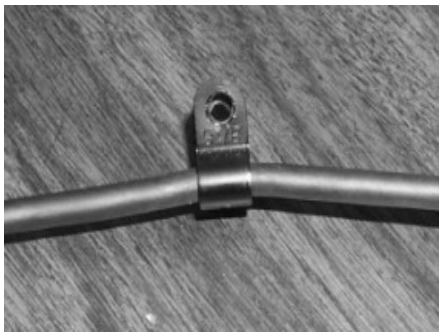
Equipment Required: Phillips screwdriver (not supplied by LXE)

There are two strain relief cable clamps secured to the VX3X endcap.

Use the strain relief clamps to secure audio, power, and I/O cables attached to the VX3X.



1. Remove the strain relief clamp from the endcap by turning the screw counterclockwise. Put the screw aside in a safe location.
2. Slide the strain relief clamp over the cable.



3. Using a Phillips screwdriver and the screw that was removed, refasten the clamp holding the cable to the endcap. Do not stretch the cable. Leave enough slack in the cable to allow it to be connected and disconnected easily when needed.
4. Continue in this manner until all cables are secured to the VX3X endcap.

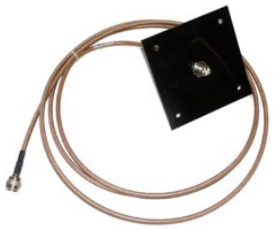
Connect Antenna

If the VX3X has the optional remote mount external antenna on the endcap, see Vehicle Remote Mount Antenna for instruction.

If the VX3X has an internal antenna (has an audio connector on the endcap and no antenna connector), the internal antenna was connected when the VX3X was manufactured.

The Vehicle Remote Mount Antenna cannot be used by devices with an internal antenna.

Remote Antenna Installation Kit

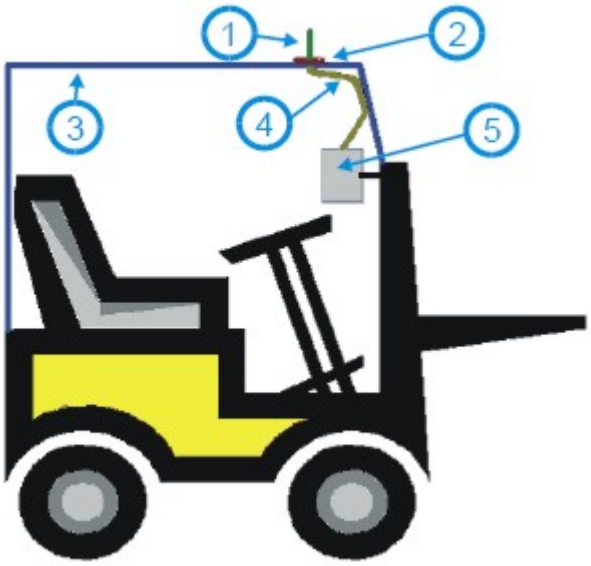


The Remote Antenna Installation Kit consists of the base plate, cable, and mounting hardware. Tools are not included.

The remote antenna base is mounted on the top of a forklift, truck or other vehicle and cabled to the VX3X inside the vehicle.

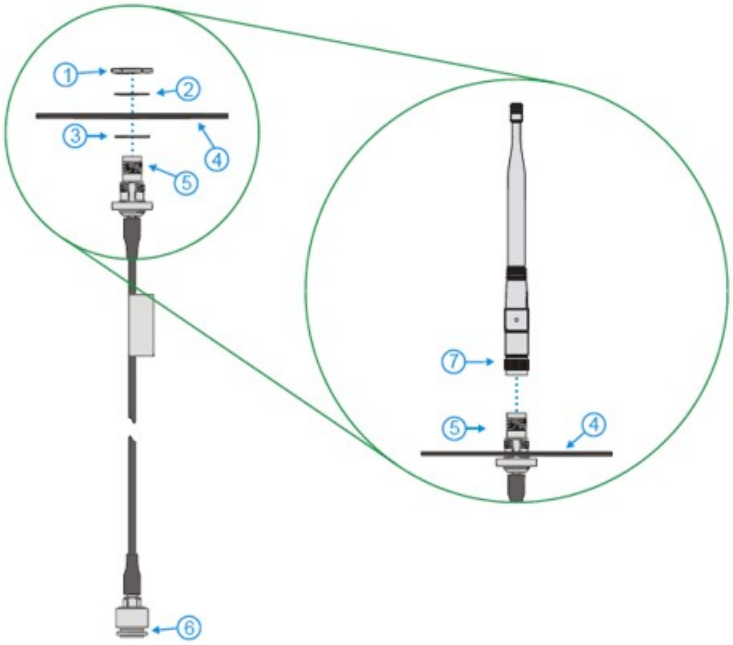
The Vehicle Remote Mount Antenna cannot be used by devices with an internal antenna.

Typical Installation



1. Antenna
2. Mounting Plate
3. Vehicle Safety Cage
4. Coaxial Cable
5. Vehicle Mounted VX3X

Components and Mounting Diagram



1. Nut
2. Lock Washer
3. Rubber Washer
4. Mounting Plate
5. To Antenna
6. To VX3X Antenna Connector
7. Antenna

Mounting Instruction

1. Attach and secure the mounting plate to the highest point on the safety cage, following these precautions:
    - The plate must be mounted so the antenna is not damaged while the vehicle or any of its parts are moving.
    - The mounting plate must be parallel to the floor.
    - If the VX3X requires two antennas, they must be mounted at least 12 inches (304.8mm) apart.
2. Attach the female connector of the coaxial cable to the antenna connector on the vehicle mounted VX3X.
3. Insert the male connector on the coaxial cable though the hole in the mounting plate.
4. Secure the connector to the mounting plate with the washer and hex nut.
5. Use cable ties to secure the coaxial cable to the vehicle as necessary. Make sure the cable is routed so it is not damaged by any moving parts of the vehicle.
6. Attach the antenna to the male connector on the end of the coaxial cable. The antenna must be mounted in a vertical position.
7. If the VX3X is using dual antennas (diversity option), repeat these steps for the second antenna.

Maintenance - Vehicle Mounted Devices

Check the vehicle mounting hardware frequently and re-tighten if necessary.

There are no serviceable parts in the vehicle mounting hardware.

If the vehicle mounting hardware and connections become broken, loose or cracked, the assembly must be taken out of service and replaced. Contact your LXE representative for assistance.

Cleaning

Do not use paper towels or harsh-chemical-based cleaning fluids since they may result in damage to the VX3X surfaces, cables, connectors and mounting hardware.

Use a clean soft cloth to wipe any dirt, moisture or grease from the VX3X, connectors, cables or the vehicle mounting hardware. Do not use any liquid to clean the VX3X, or connectors. Spray or dampen the cleaning cloth with the cleaning liquid. If possible, clean only those areas which are soiled. Lint/particulates can be removed with clean, filtered canned air.

Revision History

Revision / Date	Location	Change
B / Oct 2009	1. Cover page and contents. 2. AC Power Supply Safety Statement.	1. Applied Marketing Color Scheme. Formatted for browser delivery. 2. Deleted.
C / Jan 2010	Entire Guide	VX3X Archived / Obsolete

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